



## MULLAN HATCHERY ANNUAL REPORT

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by

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# **ABSTRACT**

Mullan Hatchery crew provided support for the kokanee spawning at Granite Creek and fall chinook spawning on Wolf Lodge Creek. There were 4,003,061 kokanee eggs brought back to the hatchery. When the eggs eyed-up, they were transferred to Clark Fork Hatchery for hatching.

Mullan Hatchery received 71,883 rainbow catchables from Grace and Hayspur hatcheries for release into waters of the southern part of Region 1.

## INTRODUCTION

Mullan Hatchery is located four miles east of the town of Mullan at the confluence of the South Fork Coeur d'Alene River and the Little North Fork of the Coeur d'Alene River on 90 acres owned by the Shoshone County Sportsmen Association. It is funded jointly by the Idaho Department of Fish and Game and Shoshone County. The county contributes about \$9,000 for maintenance and improvements of the grounds and buildings. The Idaho Department of Fish and Game staffs permanent personnel, and provides funding necessary to rear and distribute the fish.

The hatchery requires a maximum of 4 cfs of water to operate at full capacity. Water is received from the South and Little North forks of the Coeur d'Alene River to run the vats, raceways, and dirt ponds. The water for domestic use and for the incubators is drawn from a small reservoir on an unnamed creek located south of the hatchery. During August, September, and October, water is low and critical at times.

Staffing consists of a manager (Superintendent I), a temporary laborer, and one or two summer workers hired under the SYEPT Program.

The hatchery's physical plant consists of two one-car garages, a 60 ft. x 35 ft. hatchery building with the hatchery manager's residence on the second floor, a log storage building, a log shop, and a crew's residence above a two-car garage.

In recent years, the hatchery has been used to incubate 3,000,000 kokanee eggs and rear the resulting fry, finish rearing 200,000 chinook fingerlings, and redistribute 80,000 rainbow trout catchables from Hayspur Hatchery, American Falls Hatchery, or Grace Hatchery.

The incubation and early rearing is done in 6 double stacks of Heath incubators, 19 vats that are 13.5 ft. x 2.5 ft. x 1.75 ft. deep, and 6 outside raceways that contain 5,194 cu. ft. of rearing space. The incubators are run off the domestic water line because it is about 2°F warmer and has a considerably lower silt load than the creek water. When 3,000,000 or more kokanee are reared, the eggs are put in the tall stacks to eye-up and then spread out into Heath incubators in the head end of the vats to hatch. After 6.5 months, the fry come out of the incubators. They are put in the vats to swim-up; and when the vats are full, the largest fry are moved to outside raceways to give vat space to the younger fry. In this way, about 1,000,000 fry can be reared in the hatchery and 2,000,000 in the outside raceways from June until late July or early August. When the fry are about 2,500 fish/lb., they outgrow the space available and are released.

There are two 6 ft. x 65 ft. x 3 ft. deep raceways that are used to hold 6,300 lb. of rainbow catchables for distribution in the southern part of Region 1. These two raceways each re-use 125 gpm from the hatchery vats and 150 gpm fresh water from the creek.

Low water temperature, low water flow in the summer, and high silt load in the spring runoff are the major limiting factors. In an average year, the daily average water temperatures is between 56°F and 45°F for 135 days, 45°F and 35°F for 95 days, and below 35°F for 135 days.

### **OBJECTIVES**

The objectives of the Mullan Hatchery were to:

1. Rear kokanee for release in Lake Pend Oreille.
2. Provide support for kokanee spawning activities at Sullivan Springs on Lake Pend Oreille.
3. Receive rainbow trout catchables from Hayspur and Grace hatcheries and redistribute them in southern Region 1 waters.
4. Provide hatchery space and expertise for fishery research projects.

### **FISH PRODUCTION**

#### **Fall Chinook**

Mackay Hatchery transferred 20,360 4 in. fall chinook (4-Un-In-Fc-2) to Mullan Hatchery on December 11, 1985. These fish were reared in the dirt ponds until July 11, 1986, when 18,300 were released as 7.32 in. fish. Six hundred of these fish were held until July 11, 1986, when the last 252 of them were released in Grassy Mountain Lakes 1 and 2. This was an experimental release to see if a larger (9.045 in.) fall chinook would make a successful predator on an overpopulated, stunted population of brook trout.

The fish year started with 72,471 fall chinook eggs from Wolf Lodge Creek in the incubators. These eggs were very poor quality for two reasons: (1) many of the adult fish were overripe and partly spawned out, and (2) Wolf Lodge Creek still had petroleum residue left in the streambed from a ruptured oil pipeline that contaminated the creek. This material formed an oil slick on the water when the streambed was disturbed during the egg-taking activities. In early December, 20,860 of these eggs eyed-up, 16,098 hatched, and were put on feed June 10, 1986. These fish were released in Salmon Falls Reservoir on October 18, 1986 at 2.74 in.

## **FISH RELEASES AND REDISTRIBUTION**

Mullan Hatchery produced and released 93 lb. of Size 1 fall chinook from Wolf Lodge Creek that averaged 161 fish/lb. for a total of 14,973 fish and 1,556 lb. of size 2 fall chinook from Mackay that averaged 11.92 fish/lb. at release for a total of 18,552 fish.

Mullan Hatchery received 45,423 rainbow catchables from Hayspur Hatchery and 26,460 rainbow catchables from Grace Hatchery for redistribution in Region 1. Clark Fork Hatchery supplied 10,000 cutthroat fry for high mountain lake plants (Table 1).

## **FISH HEALTH**

The 600 fall chinook held over to be released as age 1+ fish broke out with bacterial kidney disease when they were 8.77 per pound. In April, the mortality went from 3 to 6 fish per month to 85 fish per month for a 1-month loss of 141. The total loss to BKD was 56.42 in 3 months.

Between November 6, 1985 and December 3, 1985, 4,003,061 kokanee eggs were put in Heath incubators. The first 1,874,133 were put in incubators supplied from the domestic water supply. The last 2,128,133 were put in Heath incubators that ran from the vat water system from the South Fork Coeur d'Alene River, which was 32°F for several months. All eggs supplied by the vat water system died. The water was sampled and analyzed several times; and the eggs were checked for disease and heavy metal. When cleared with glacial acetic acid, the eggs showed no visible embryonic development. The only explanation that could be drawn was that vat water system eggs were incubated in water too cold for too long a period.

## **SPAWNTAKING OPERATIONS**

The Mullan Hatchery crew provided support for the spawning activities for the late kokanee spawning at the Granite Creek trap and the fall chinook trap on Wolf Lodge Creek. Twenty-four man-days were spent at the kokanee trap, and 4,003,061 eggs were brought back to the hatchery to be incubated. After eye-up, the remaining 1,677,525 eggs were sent to Clark Fork to hatch.

The run of fall chinook in Wolf Lodge Creek was trapped. Eggs were taken twice for a total of 8,697 eggs.

Table 1. Summary of fish released during the 1985-1986 fish year.

Name of water	Catalog number	Pounds	Number	Origin	Size
<u>Rainbow</u>					
Priest River	02-03	560	2,022	Hayspur/Grace	3
Coeur d'Alene R.	03-22	3,464	13,136	Hayspur/Grace	3
S.F. Coeur d'Alene R.	03-22-06	1,078	4,192	Hayspur/Grace	3
Big Creek	03-22-06-0009	65	273	Hayspur/Grace	3
Day Rock Pond	03-22-06-0013	537	2,006	Hayspur/Grace	3
Gold Creek Pond	03-22-06-0016	556	2,002	Hayspur/Grace	3
N.F. Coeur d'Alene R.	03-22-08	1,586	5,997	Hayspur/Grace	3
Beaver Creek	03-22-18	139	501	Hayspur/Grace	3
Prichard Creek	03-22-19	139	501	Hayspur/Grace	3
Eagle Pond	03-22-20	816	3,010	Hayspur/Grace	3
Shoshone Creek	03-22-23	139	501	Hayspur/Grace	3
St. Joe River	03-23	2,059	7,968	Hayspur/Grace	3
St. Maries River	03-23-01	1,876	7,196	Hayspur/Grace	3
Marble Creek	03-23-21	538	2,083	Hayspur/Grace	3
N.F. St. Joe River	03-23-32	1,522	6,059	Hayspur/Grace	3
Elsie Lake	03-0119	780	3,024	Hayspur/Grace	3
Day Pond	03-0120	257	997	Hayspur/Grace	3
Lower Glidden Lake	03-0123	776	3,011	Hayspur/Grace	3
Dismal Lake	03-0138	70	253	Hayspur/Grace	3
<u>Cutthroat</u>					
Heart Lake	06-0122	3.2	10,000	Clark Fork	1
<u>Fall Chinook</u>					
Coeur d'Alene Lake	03-0105	1,500	18,300	Mullan	3
Salmon Falls Res.	05-0190	93	14,973	Mullan	1
Grassy Mt. Lake 1	07-0180	28	126	Mullan	3
Grassy Mt. Lake 2	07-0183	28	126	Mullan	3

#### **FISH FEED UTILIZED**

The fall chinook were fed Rangen's dry diet and OMP feed. The hatchery produced 160 lb. of fish with 480 lb. of feed that cost \$135.80. This gives a fish feed cost per pound produced of \$0.884, and a conversion of 2.982.

#### **HATCHERY IMPROVEMENTS**

The crew's residence had a utility room built in one corner of the garage to provide some space for a washer, dryer, freezer, and storage that can be locked.

A 10 in. pipeline from the dam on the Little North Fork Coeur d'Alene River to the hatchery was replaced by Bonneville Power Administration as mitigation for damage that might be done to the water quality in the South Fork Coeur d'Alene River when they built the new powerline across the creek above the hatchery.

#### **MISCELLANEOUS ACTIVITIES**

The hatchery grounds are owned by the Shoshone County Sportsmen Association. We attended their meetings to keep them up-to-date on activities at the hatchery.

#### **ACKNOWLEDGMENTS**


Hatchery staffing for the year included Ivan Talbott, Superintendent I; Mary Alexander, Temporary Laborer; and Jim Dunigan, SYEPTA employee.

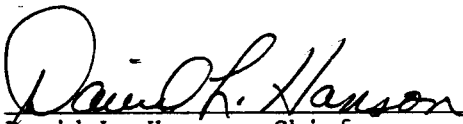
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